megecad *limicola* ecad *volubilis*. They also stated that the American form is no different from the British.

It now seems clear that there are two distinct marsh fucoids to be found on the coast of New England. Both have been described by earlier authors who have unfortunately misnamed them. A clear statement on the two forms and their synonyms is presented below.

FUCUS VESICULOSUS megecad LIMICOLA ecad VOLUBILIS Baker.[1] "*Fucus vesiculosus* var. *spiralis*" auct. *non* Farlow. Johnson and York, 1915. Carn. Publ. 212; Collins, RHODORA, 1905. vol. vii; Taylor, Mar. Alg. N. E. Coast N. Amer. Mich. Univ. 1937. Pl. 25–45.

Fucus spiralis maritima minor Hudson, Flor. Angl. 1778. p. 577. [*Fucus volubilis*] Baker, S. M. *Journ. Linn. Soc. Bot.* 1912. vol. 40, p. 289. *Fucus vesiculosus* var. *volubilis* Turner, Syn. Brit. Fuci. vol. 1, 1802. *Fucus spiralis* var. *volubilis* Batters, *Journ. Bot.* vol. 40, 1902. *Fucus axillaris* var. *spiralis* J. G. Ag. Bid. Spets. Alg. in *Kong. Svensk. Vet. Akad. Handl.* vol. vii, 1868. *Fucus vesiculosus* megecad *limicola* ecad *volubilis*. Baker and Blandford, *Journ. Linn. Soc. Bot.* 1915, p. 352. Collected from marshes in Cold Spring Harbor, L. I.

FUCUS SPIRALIS var. LUTARIUS (Kütz.) Sauv. "*Fucus vesiculosus* var. *spiralis*" Farlow, Mar. Alg. N. England, 1881, p. 101. *Fucus lutarius* Kütz. Tab. Phyc. Vol. X. 1860, p. 7 and tab. 17. *Fucus spiralis* var. *lutarius* Sauv. *Bull. Bord. Soc. Scien. d'Arcachon.* 1908, pp. 106–160, figs. 16–19.

Probably generally distributed along the marsh coast of New England and confined to low marsh dominated by *Spartina alterniflora*.

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PLANTS OF CENTRAL PENNSYLVANIA

ROBERT T. CLAUSEN AND HERBERT A. WAHL

THE basis for these notes is a trip made by us in early June, 1937, in some of the counties of central Pennsylvania. Report is also included concerning several other collections made in the summer of the same year. In the citation of specimens, our names are abbreviated as: *C*, R. T. Clausen, and *W*, H. A. Wahl. Specimens are deposited in the herbaria of the Bailey Hortorium and the Department of Botany at Cornell University, also in the herbarium of the Pennsylvania State College.

[1] " " = misidentification

Isoetes Dodgei A. A. Eaton (*I. riparia* var. *canadensis* Engelm.). Wipples Dam, 10 miles south of State College, Huntingdon Co., Aug. 20, 1937, *W* 274.

This is apparently the first record for central Pennsylvania. The specimens possess megaspores with jagged crests and leaves to 30 cm. long.

Isoetes Engelmanni A. Br. On muddy shore of stream, Ingleby, Centre Co., June 6, *C* & *W* 2535; partially and entirely submerged at edge of pond at Wipples Dam, 10 miles south of State College, Huntingdon Co., Aug. 20, 1937, *W* 273.

Leaves of these plants attain a length of 30 cm. Central Pennsylvania records seem lacking.

Asplenium Ruta-muraria ssp. **cryptolepis** (Fernald), n. comb. *A. cryptolepis* Fernald, Rhodora **30:** 41. 1928. Frequent on limestone rocks on west side of Spring Creek, Rock, north of Lemont, Centre Co., June 5, *C* & *W* 2526.

Review of the evidence presented by Fernald (1928) and of suites of American and European specimens lead to the conclusion that the Old and New World populations of the Rue Spleenwort are very closely related and should not be specifically segregated, since the characters upon which this separation is based seem not fundamental, nor can they be rigidly applied. That the American plant is rare, as stated by Fernald, is by no means borne out by field experience in northwestern New Jersey and parts of Pennsylvania, where it could only be rated as common. Some European specimens have the stipes mostly naked, as is usually the condition in American material. Although well developed European plants, particularly from the southern part of the range, are larger than American plants, most are small and of similar size. In our specimens, the stipes measure 1.0–6.0 cm. long and the fronds, 1.5–3.0 cm., with the segments 4–12, coming well within Professor Fernald's measurements for American plants, but some European specimens almost exactly reseumble these. Further, the teeth of our specimens are coarse, but bordered by a cartilaginous rim, as is supposed to be the condition only in Old World specimens. Examination of spores of the two supposed species reveals that, as Prof. Fernald has indicated, there is no difference in size, though there is a difference in the nature of the architecture of the spore-coat. In the European plants, the spores are considerably rough, almost jagged, while in the American plants, they are less coarsely roughened, but this tendency seems not of great systematic value. Since the

separation of the two populations must depend finally upon the scales of the rootstock and a tendency in size, it seems best to treat groups thus closely related, but geographically isolated and slightly differentiated, as subspecies.

DRYOPTERIS PHEGOPTERIS (L.) C. Chr. Rich wooded slope at Rock View, Leolyn, Tioga Co., June 5, *C* & *W* 2518.

CYPERUS HOUGHTONII Torr. A small colony on barren shaly hillside at Ingleby, 2 miles east of Coburn, Centre Co., Sept. 11, *W*.

This seems not to have been previously reported from Pennsylvania.

CAREX PRAIREA Dewey. Decidedly cespitose, forming large tussocks in rich alluvial boggy meadow, Centre Furnace, about 1 mile east of State College, Centre Co., June 7, *C* & *W* 2448.

Pennsylvania records seem significant, since the state is in the southern part of the range of this species as given by Mackenzie (1931–35).

CAREX INTERIOR L. H. Bailey. Frequent in rich alluvial boggy meadow, Centre Furnace, about 1 mile east of State College, Centre Co., June 7, *C* & *W* 2557.

These plants appear typical, with ovate orbicular perigynia with short beaks. Like *C. prairea*, with which it occurs in association here, this species seems to reach its southern limits in Pennsylvania.[1]

CAREX ANGUSTIOR Mackenzie, var. **gracilenta** var. nov., spicis disjunctis et foliis gracillimis et angustissimis, 0.2–1.0 mm. latis. TYPE in Gray Herbarium, COTYPES at Bailey Hortorium and in herbaria of Cornell University and R. T. Clausen; moist woodland along stream at Ingleby, 2 mi. east of Coburn, Centre Co., June 6, *C* & *W* 2532. Besides the type, there may also be cited a collection (*W*) from 10 miles west of State College.

This differs from the typical variety of the species in the more lax and flexuous habit; in the longer inflorescence, 1.5–2.5 cm., with the 2–3 spikes rather remote; and in the very narrow leaves, which are from 0.2–1.0 mm. wide. Intermediate between this variety and typical *C. angustior* are specimens from a moist meadow 2 miles west of Richford, Tioga Co., N. Y., July 4, 1937, *C* & *S. J. Smith* 2631. These plants have the inflorescence 1.5–2 cm. long, with the spikes subremote. In the narrowness of the leaves and the slender habit, the collection of *E. Faxon*, no. 9, from Mt. Pleasant, N. H., resembles var. *gracilenta*, but it differs in having the spikes contiguous.

[1] Now reported by Core (Proc. W. Va. Acad. Sci. **11**: 36. 1938) from near Huntington, Cabell Co., West Virginia.

CAREX GEYERI Boott. By limestone outcroppings, in dry deciduous woods on bluffs and slopes on west side of Spring Creek near west boundary of grounds of State Penitentiary, Rock, north of Lemont, Centre Co., June 5, *C & W* 2524.

Carex Geyeri grows on the bluffs along the west side of Spring Creek associated with *Asplenium Ruta-muraria* ssp. *cryptolepis*, *Carex oligocarpa*, and *Senecio obovatus*, in the shade of *Ostrya virginiana*, *Ulmus fulva*, and *Acer saccharum*. It was first discovered at this station in May, 1932, and has been under observation since that time. The possibility that this might represent an eastern representative of the section *Firmiculmes*, perhaps specifically distinct from *C. Geyeri*, has been considered, but all efforts to find satisfactory characters have failed. It was first thought that the Pennsylvania plants were more slender, with narrower leaves and slightly smaller perigynia, but large series of *C. Geyeri* from western North America indicate that the species there varies somewhat in habit and that the eastern plants come well within this range of variation. Although the habitat in Centre County seems natural and undisturbed, yet one may wonder whether the species is truly native there or has been introduced through the agency of man. We have no evidence to explain this unusual occurrence.

CAREX WOODII Dewey. Rich wooded slope by Woodward Cave Woodward, Centre Co., June 6, *C & W* 2542.

This is reported only from the western part of Pennsylvania by Mackenzie (1931–35).

CAREX LAXICULMIS var. COPULATA (Bailey) Fernald. Rich wooded slope by Woodward Cave, Woodward, Centre Co., June 6, *C & W* 2543; also rich woods, Rock View, Leolyn, Tioga Co., June 5, *C & W* 2512.

Instead of representing an extreme of *C. laxiculmis*, these collections seem more nearly intermediate between *C. digitalis* and *C. laxiculmis*, with the perigynia small, 2.6–2.8 mm. long, with staminate flowers borne at the bases of the fertile spikes, and with the leaves from 4–7 mm. wide.

CAREX LASIOCARPA ssp. **lanuginosa** (Michx.), n. comb. (*C. lanuginosa* Michx., Fl. bor. am. **2:** 175. 1803. *C. lasiocarpa* var. *lanuginosa* (Michx.) Kükenth in Engler, Das Pflanzenreich. **4**(20): 748. 1909.) Specimens with the leaves 1.5–3.5 mm. wide and the lowest pistillate spikes slightly peduncled, from rich alluvial boggy meadow, Centre Furnace, about 1 mile east of State College, Centre Co., June 7, *C & W* 2560.

Mackenzie and most other recent American students have maintained as species, *Carex lasiocarpa* and *C. lanuginosa*, basing this segregation largely on leaf-width, but also upon whether or not the lowest pistillate spike is peduncled, as well as on the condition of the beak of the achene. Certain intermediate specimens, as the collection of J. L. Edwards on June 27, 1936, from Succasunna, Morris County, New Jersey, led to a review of the material passing under the two names in the herbaria of Cornell University.

The Edwards plants were received as *C. lasiocarpa* and the extremes did represent that species, but the series revealed variations in leaf-width from the involute-filiform condition to flat and 2 mm. wide, and from having the lowest pistillate spike sessile or essentially so to possessing a stalk 2 mm. long. Examination of the available general series demonstrated that *C. lasiocarpa* ssp. *typica* definitely varies towards ssp. *lanuginosa*, while plants which have been passing as *C. lanuginosa* may be divided into two lots on a basis of leaf-width. The narrow-leaved phase (leaves 0.5–3 mm. wide), which seems intermediate between the broad-leaved form (leaves 2–4 mm. wide) and typical *C. lasiocarpa* (leaves 0.5–1.5(–2) mm. wide), seems to occur largely or almost entirely, in the area where the two so-called species overlap. South of this area, apparently only broad-leaved plants of *C. lanuginosa* occur, while north of it, and in northern Europe and Asia, typical *C. lasiocarpa* seems to be the only form represented.

Besides the leaf-character mentioned above, Victorin (1935) has employed the shape of the scale as basis for separation. He states that it is acuminate and aristate in *C. lanuginosa*, while it is acute or shortly aristate in *C. lasiocarpa*. In material, which on basis of width of leaf should be referred to *C. lanuginosa*, we found variation in the apex of the scale from acute to long-aristate, while in typical *C. lasiocarpa* we found the same range of variation. It has been stated by Robinson and Fernald (1908) that *C. lanuginosa* usually has the lowest spike peduncled, while all the spikes are sessile in *C. lasiocarpa*, but we have found specimens of the latter with the lowest spikes varying from sessile to possessing peduncles 2 cm. long, while specimens of the former may have the lowest spikes sessile or with peduncles from 1–50 mm. long. Other characters, such as length of lowest bract, employed by Mackenzie (1931–35), appear equally unsatisfactory.

Since few specimens from New York or New England are of the extreme broad-leaved form of ssp. *lanuginosa*, but many are inter-

mediate in character, they must be identified in a rather arbitrary fashion, because they appear slightly more one way than another. In the light of such a situation and in the absence of other good characters, it seems best to treat the broad-leaved race, which in North America is more southern and western than ssp. *typica*, as a subspecies of the collective species, *C. lasiocarpa*. The name of Michaux is employed for the broad-leaved race, despite the fact that the type is from the extreme northern limits of the range of this subspecies.

Carex Schweinitzii Dewey. Alluvial boggy meadow, Centre Furnace, about 1 mile east of State College, Centre Co., June 7, *C* & *W* 2559.

The pistillate spikes are 3–7 cm. long, with the lower perigynia rather remote and abortive. The staminate spikes often bear secondary spikes, sometimes with one pistillate flower at base, while the pistillate spikes are sometimes staminate at the apex. The variation in this material suggests the sort of instability that one might expect to find in a hybrid population. Besides the above collection, *C. Schweinitzii* has been reported elsewhere in Pennsylvania from Monroe and Susquehanna Counties by Porter (1903) and from Presque Isle, Erie County, by Bright (1925–30), but apparently no specimens from the state were available to Mackenzie.

Carex Frankii Kunth. Edge of woods in shaly soil beside path, Woodward Cave, Woodward, Centre Co., July 17, *W*.

Bright (1925–30) reports this species as being locally abundant in some southwestern counties. This station in Centre County is probably due to accidental introduction by tourists visiting Woodward Cave.

Amelanchier humilis Wiegand. Oak barrens southwest of State College, Centre Co., June 6, *C* & *W* 2552.

Phlox ovata L. Oak barrens 10 miles southwest of State College, Centre Co., June 6, *C* & *W* 2551.

Bailey Hortorium,
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and
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Pennsylvania State College, State College, Pennsylvania.

Literature Cited

Bright, J. 1925–30. The genus Carex in Pennsylvania. Trillia IX. p. 1–33.

Fernald, M. L. 1928. The American representatives of Asplenium Ruta-muraria. Rhodora **30:** 37–43.

Mackenzie, K. K. 1931–35. Cyperaceae, in North American Flora. **18** (pts. 1–7): 1–478.
Porter, T. C. 1903. *Carex Schweinitzii*, in Flora of Pennsylvania. p. 62.
Robinson, B. L. and **M. L. Fernald.** 1908. *Carex filiformis* and *C. lanuginosa*, in Gray's New Manual of Botany. p. 248.
Victorin, Marie-. 1935. *Carex lasiocarpa* and *C. lanuginosa*, in Flore Laurentienne. p. 746.

ON CERTAIN PLANT RECORDS FROM HILLSBORO, NEW HAMPSHIRE

C. A. WEATHERBY AND S. F. BLAKE

Since Mr. A. A. Beetle's recently published list of the vascular flora of the Fox Forest, Hillsboro, New Hampshire,[1] contains several reports of species not otherwise known from the region, it has seemed desirable to examine the specimens in the herbarium of the Forest on which, according to Beetle's preface, his records are based. Through the courtesy of the Director, Dr. Henry I. Baldwin, we have been able to make such an examination. Checking the herbarium against the published list discloses a considerable number of misidentifications. It seems unnecessary to publish a full list of these in RHODORA, since in the great majority of cases the species concerned are unquestionably present or likely to occur in the Fox Forest or its vicinity, although the specimens on which their presence in the list depends are wrongly named. In the interest of accurate phytogeography, however, some of the reports should be corrected, particularly those of calcicolous species not to be expected in the hill country of southern New Hampshire. The list of such errors follows. Author citations are given only for names not in current manuals.

Cystopteris bulbifera. Not known in southern New Hampshire. The Fox specimen is *Dennstaedtia punctilobula.*

Selaginella apoda. This might occur at Hillsboro, but the specimen is a moss.

Triodia flava (L.) Smyth. Known in southern New Hampshire only from the Merrimac valley. Specimens are a mixture of *Agrostis alba* and *A. tenuis.*

Carex diandra. Known in New Hampshire only in Coös County. Specimen is young *C. stipata.* Mr. Beetle himself made this correction on a duplicate sheet in the herbarium of the New England Botanical Club, but apparently too late to get it into the list.

[1] Beetle, A. A. Flowering Plants and Ferns of the Fox Research Forest, Hillsboro, New Hampshire. Caroline A. Fox Research and Demonstration Forest, Bull. no. 9. 40 pp. Concord, N. H., 1938.